Land Disposal: Gerlach General Improvement District Five Acre Disposal Environmental Assessment

EA Number: EA-NV-020-04-34 Serial Number N-77410

BLM Office: Winnemucca Field Office
5100 E. Winnemucca Blvd.
Winnemucca NV 89445

Date: September 29, 2004

Responsible Official: Dave Hays, Assistant Field Manager, Nonrenewable Resources

Proposed Action Title/Type: Land Disposal: Gerlach General Improvement District

Nominee: Gerlach General Improvement District

Proposal: The proposal is to dispose of 5.0 acres of federal land managed by the Winnemucca Field Office (WFO), State of Nevada, Bureau of Land Management (BLM).

Location: Washoe County, Mount Diablo Meridian, Nevada

T. 32 N., R. 23 E.,

Section 16:
SW1/4 NW1/4 SW1/4 NW1/4 NW1/4 = 0.625-acres;
W1/2 SW1/4 SW1/4 NW1/4 NW1/4 = 1.250 acres;
NW1/4 NW1/4 NW1/4 SW1/4 NW1/4 = 0.625-acres.

Section 17:
SE1/4 NE1/4 SE1/4 NE1/4 NE1/4 = 0.625-acres;
E1/2 SE1/4 SE1/4 NE1/4 NE1/4 = 1.250 acres;
NE1/4 NE1/4 NE1/4 SE1/4 NE1/4 = 0.625-acres

Containing 5.000 acres more or less.

I. PURPOSE

The purpose is to dispose of 5 (five) acres of Federal land to the Gerlach General Improvement District (GGID). The Federal land is managed by the Winnemucca Field Office (WFO), Bureau of Land Management (BLM). The GGID would use the land to construct a water treatment facility. The GGID is an incorporated municipal entity responsible for the town of Gerlach's water supply.

II. NEED

On December 7, 2000, The United States Environmental Protection Agency (USEPA) established a maximum contaminant level (MCL) for uranium (40 CFR Parts 9,141 and 142) for drinking water. The Washoe County District Health Department has determined the city water for Gerlach meets all of the Nevada Administrative Code or Safe Drinking Water Act (SDWA), except for exceeding the maximum contaminant level for uranium. This determination was based on the allowable level established by the National Primary Drinking Water Regulations.

Gerlach acquires its drinking water from two springs located on the west slope of the Granite mountain range on federal land. Uranium concentrations in the Railroad and Garden Springs have been as high as 110 µg/L and 290 µg/L, respectively. The maximum contaminant level for uranium allowable in drinking water is 30 µg/L.

Uranium has toxic effects on the body related to both its chemical and radiological properties. It creates a carcinogenic effect on the body by the production ionizing radiation. The alpha, beta, and gamma radioactive particles can damage chromosomes or other parts of the affected cells in living tissue. This cellular damage can lead to the death of the cells or to unnatural reproduction of the cells, thus becoming cancer. However, the greater health concern is the chemical toxicity on the kidneys rather than the radiotoxicity of naturally occurring uranium.

The GGID must develop a water treatment system which would lower the uranium MCL below 30 ug/L to meet USEPA drinking water standards. The 5-acre site, proposed for disposal to facilitate the GGID in meeting its need to construct a filtration plant, is located approximately one mile northwest from the town of Gerlach. It is approximately 200 feet south of State Route 447. Bureau of Reclamation's road, "Godey's Gap", intersects Star Route 447, and crosses diagonally over the site's NW corner.

III. ISSUES

1). Would the proposed infrastructure conflict with the adjacent scenic resources?

Washoe County has identified the vicinity as a scenic area. The development proposal would be approved by the Washoe County Planning Commissioners, and would be subject to any mitigation requirements imposed by the permit to protect scenic resources.

2). Would there be effects to health associated with the uranium filtration process?

There should be no effects to health. The process itself removes uranium from the drinking water supply and concentrates it on the ion exchange resin. Any potential health effects from uranium are inhalation, ingestion, and as a much smaller risk, radiation exposure. Inhalation effects are solved since the resin is always wet. Radiation exposure in the treatment plant should never exceed occupational exposure limits. The District's radioactive material license would require a material handling and storage plan which would address removing the resin from the

vessels and short term storage of the 55 gallon drums. The entire system would be under the jurisdiction of the Nevada Division of Environmental Protection, the Washoe County Health Department, and the Washoe County Building Department. Any possible health effects would be considered in the plant design and construction requirements.

3). Would there be possible safety factors regarding the filtration plant?

Safety factors for maintenance and operation of the filtration plant would be determined through the design process and in permitting the facility. The building would be designed by a licensed Nevada structural engineer. Secondary containment would be incorporated into the design for spill control, as required by the Nevada State Health Division. Radiological monitoring devices would be installed as necessary. The building would be alarmed to prevent unauthorized access. Transportation of the resin would fall under the auspices of Federal Highways Department and the Nevada Department of Transportation

4). Would there be affects to wildlife resulting from the filtration plant or process?

Wildlife should not be affected. Wildlife should not be able to find access into the filtration plant. The treatment filtration system would be housed in a concrete building deigned to level 3 earthquake requirements, which should withstand seismic events, precluding any impact to wildlife from building failure. The resin would be in sealed containers not accessible to wildlife. The used resins would be transported in sealed drums carried within transport trucks. There should not be any impacts to wildlife.

IV. COMPLIANCE

Relationship to Federal Statutes, Regulations, and Plans

A. FLPMA
1. The parcel would be sold under the authority of Federal Land Policy and Management Act (FLPMA) of 1976, Public Law 94-579, October 21, 1976, as amended. The Bureau of Land Management has the authority to sell public lands under certain criteria:

FLPMA Section 102 (a)(1), states in part that the public lands be retained in Federal ownership, unless as a result of land use planning procedure it is determined that disposal of a particular parcel would serve the national interest.

The national interest would be served by disposing of the parcel. Gerlach's drinking water exceeds the national standard for uranium elements. Use of the town's water supply could be disallowed if the filtration system is not constructed. The residents are dependent on the city water system for their water needs. It is in the national interest to facilitate the city in maintaining its drinking water. It is in the public interest for the Water District to own the parcel as this would facilitate them in managing the infrastructure as a public facility.

2. FLPMA Sec.203 (43 USC 1713) (a), Directs that land may be sold under FLPMA where, as a result of land use planning required under section 202 of the Act, the Secretary determines that the sale of such tract meets the following disposal criteria: (3) disposal of such tract would serve important public objectives, including but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibility on land other than public land and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in federal ownership.

The sale of the public land to the GGID would serve important public objectives by providing land to construct a filtration system to provide safe drinking water to the community and the public within the District's service area.

The disposal lands are currently encumbered by a right-of-way (R/W) authorized to GGID's for the town's two water towers. The recommended treatment plant site is the land directly adjacent to the water tanks. Important public objectives would be met by disposing the same lands currently encumbered by the R/W. It eliminates the need to relocate the water towers and the associated water pipe-system; it utilizes land which has been previously disturbed by the two water towers and a historic tower which no longer exists therefore eliminating the need to disturb land previously undisturbed.

3. FLPMA Sec. 203 (d), requires lands disposed of be sold at no less then fair market value. The parcel would be appraised by a federal appraiser to determine the fair market value, and the land would be sold at no less than the appraised fair market value.

4. FLPMA 203 (f), describes the allowable methods of sale: "Where the Secretary determines it necessary and proper in order (2) to recognize equitable considerations or public policies, including but not limited to, a preference to users, he may sell those lands with modified competitive bidding or without competitive biding." The public lands would be sold under the Direct sale method pursuant to 43 CFR 2711.3-3(a)(1)(2):

(1) "A tract identified for transfer to State or local government or non-profit organization;" The proposed sale location would be transferred (sold) to a local government.

(2) "A tract identified for sale that is an integral part of a project or public importance and speculative bidding would jeopardize a timely completion and economic viability of the project."

The existing water tanks on the subject property are an integral part of the proposed filtration system project. Were speculative bidding allowed, a bidder could out bid the GGID, thereby jeopardizing the timely completion and economic viability of the project.

5**.** FLPMA 209 (b)(1), describes the allowance and means to convey mineral interests owned by the United States to the prospective surface owner when a parcel leaves federal ownership if it is proven that there are no known mineral values in the land, or if the reservation of mineral rights in the name of the United States would interfere with or preclude appropriate non mineral

development of the land and that such development is a more beneficial use of the land than mineral development.

A mineral report was completed on September 2, 2004, by a BLM staff geologist. It was determined the mineral estates shall be reserved to the United States of America and its assigns.

B. WFO Land Use Plan

The "Sonoma-Gerlach Management Framework Plan", signed July 9, 1982, by the Nevada BLM State Director, is the WFO's Land Use Plan applicable to this proposal. The proposed land disposal is in conformance with the Plan (Section L2).

The "Paradise-Denio and Sonoma-Gerlach Management Framework Plan (Plan), Approved Lands Amendment and Decision Record, January 1999" categorized the federally managed lands into three land tenure zones, zone one, two, and three. The subject parcel is in "zone three".

a. Zone three lands are potentially suitable for disposal. They are generally scattered parcels possessing characteristics that indicate that they may hold little or no significant resource values, (p2).

b. Prior to disposal, the Plan requires the evaluation of several disposal criteria (pp 5 & 6). The disposal requirements pertinent to the proposed disposal are analyzed in the "Affected Environment" section of this Environmental Assessment.

C. Relationship to Local Plans

Washoe County, Nevada's Master Land Use Plan is on line at: www.co.washoe.nv.us/comdev/. The subject lands are addressed in the "High Area Desert Plan." Once in private ownership, the land's allowed uses would be determined by its zoning.

D. Applicable Regulatory Requirements/Coordination

1). Permitting Process

The subject parcel's county zoning designation is "General Rural". According to the Washoe County Planning Department, this zoning allows for a broad array of uses essentially with no limitations. However, a special use permit would be required because the proposal is by a utility district – the GGID. The application would be reviewed by the Department of Water Resources, by the Citizen's Advisory Board and approved by the Washoe County Planning Commission. The Washoe County District Health Department (WCDHD) enforces the regulations of the State Board of Health. WCDHD will issue the construction permit for compliance with the Safe Water Drinking Act, and will regulate the facility. The structural and operational components would be regulated by International Code Council, Uniform Plumbing Code, and Utility District Operational Guidelines. The Radiological Health Section of the Nevada State Health Division (NSHD) Bureau of Health Protection Services is responsible for issuing a radioactive material

license. The NSHD is designated as the state radiation control agency and is authorized to take all actions necessary or appropriate to carry out provisions of NRS 459.010 to 459.290. The Division is required to develop and conduct programs for the evaluation of and response to hazards associated with the use of sources of ionizing radiation. The NSHD and WCDHD are already involved with the development of the design for the project.

2). Filtration System Operation

a) The operator would have a water treatment operator license as required by NAC 445A.629.

b) A nuclear badge is not required.

3). Seismic Requirements for Construciton

The treatment plant building would be designed to meet the Uniform Building Code requirements for Zone 3. The interior of the building would be designed with secondary containment to hold in excess of the 100 cubic feet of resin in the pressure vessels in the event of a large seismic event.

V. ALTERNATIVES

ALTERNATIVE ONE - THE PREFERRED ALTERNATIVE

The Preferred Alternative would be for the BLM to sell the 5-acre parcel of federal land to the GGID. The land would be used for the construction of a water treatment facility for the removal of uranium from Gerlach's water supply.

Reasonable Foreseeable Development (RFD)

It is reasonable to assume a water treatment plant would be constructed on the 5 acre parcel once sold. The proposed water treatment plant would remove uranium from the town's drinking water supply to meet EPA standards. The design was selected based on construction costs, long term costs factors to run the facility and to dispose of uranium waste, and environmental constraints such as potential impacts to wildlife, safety and disposal of uranium waste.

a). Design

The rated capacity of the treatment plant is 200 gpm, and would be called on and off by the levels of the adjacent 300,000 gallon welded steel finished water storage tank. The plant would consist of two 54 inch diameter by 84 inch side-shell tanks. They would be welded steel construction filled with concrete on the bottom bulkhead, followed by support material in the form of sand, followed by 36" of resin. The inside of the tanks would be coated with National Sanitation Foundation (NSF) approved primer for corrosion resistance. Construction would be in accordance with American Society of Mechanical Engineer (ASME) Code for Unfired Pressure Vessels stamped for a working pressure of 100 psi. Each tank (vessel) would hold 50

cubic feet of an ion exchange resin. The vessels would be mounted on a steel skid, and the skid would then be fastened to the concrete floor of the building. All structural components of the treatment plant and building would be designed for seismic zone 3. A 30 foot by 30 foot building would house the skid mounted treatment equipment which is 7' deep by 10' wide. There would be electrical and controls equipment, and a small sodium hypochlorite feed system for water purification. The building is sized for future expansion, and also for the operator to safely move about the facility for operation and maintenance procedures. The building is planned for construction adjacent to the existing water towers on previously disturbed ground. It would be concrete masonry block on a concrete footing/foundation.

b). Technology

The treatment technology is ion exchange which removes the uranium from the water with the use of an ion exchange resin. Each vessel would be loaded with approximately 50 cubic feet of resin each. Annually, resin from the lead vessel would be removed by vacuum or gravity and placed in six 50 gallon steel drums. The drums would be stored in the treatment building for no more than five days before transport to Smith Ranch Highland Uranium Project mine in Douglas, Wyoming, which is owned and operated by Power Resources, Inc. (PRI). PRI would put the resin into one of their ion exchange vessels and then reuse the steel drums as desired. The lead vessel would be reloaded with 50 cubic feet of fresh resin and returned to the filtration site for the new filtration cycle.

Both vessels would be used all of the time, one being the lead vessel and the second being a polishing vessel. All of the uranium would be removed in the lead vessel, with only traces making it to the polishing vessel. The polishing vessel provides redundancy and a safety factor to ensure that the uranium is removed.

c). Filtered Water

The water leaving the ion filtration exchange vessel would contain <2 µg/L of uranium. It would be blended with a calculated amount of raw water to provide water to the town of Gerlach at 25 µg/L, which is 5 µg/L below the maximum contaminant set by the USEPA.

d). Water Purification

The water would be disinfected with sodium hypochlorite at this facility, which is not pure liquid chlorine. The sodium hypochlorite will come in one gallon bottles at a concentration of 12.5%. They will be poured into a 50 gallon plastic tank and diluted with water to a concentration of less than 5%. Clorox bleach is 5% strength. Pure liquid chlorine and chlorine gas would not be used due to safety issues. Sodium hypochlorite is extremely safe in comparison to chlorine gas, which is why the industry is going away from chlorine gas and is instead going to sodium or calcium hypochlorite.

e). Transportation of the Resin

The drums containing the resin would be picked up and transported out of state across municipal roads and highways by a licensed hauler. Any associated regulations or permits required would be regulated by the State, County, or Federal Agencies other than the BLM.

ALTERNATIVE TWO - THE NO ACTION ALTERNATIVE

Under the No Action Alternative, the land sale would not proceed. The "Purpose and Need" statement would not be met. The subject lands would remain public lands available and would be subject to all applicable public land laws and regulations.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED

The determination to locate the plant on the existing water tower location, and the selection of the proposed engineered design by GGID resulted after extensive consideration of alternate sites and engineered designs:

1). Other Locations Under the Management of The WFO

Other public lands managed by the WFO were considered. These were not considered further because the proposed location is in the best location related to the water supply's origination, its proximity to the town, its elevation facilitating the gravity flow required for an adequate head, and the existing infrastructure consisting of two water towers and pipeline system.

2). Consolidation with the Town of Empire

The town of Empire has drinking water wells for its water supply which meet Nevada Administrative Code (NAC) drinking water standards. Consolidation with the Empire water system would require construction of a 7 mile pipeline, the drilling of another well, and a pump station to get the water to the tanks. The cost for these facilities would be on the order of $2.5 million, plus additional cost for consolidation of the water systems. This alternative was not analyzed further because of cost and the potential environmental impacts resulting from construction activities.

3). Location Of The System In The Town of Gerlach

Regulations require that all drinking water in the distribution system must comply with SDWA water quality standards. Nevada Administrative Code requires that a water system provide fire flow as required by the fire authority. This is generally not less than 750 gpm flow requirement for residential fires, and up to 4000 gpm for industrial areas. To site a treatment plant in town, where power is available, would either require a treatment plant capacity of at least 750 gpm, or a mile long pipeline feeding raw water to town along with a booster pump station to pump the water back up to the tanks. This is not an economical option.

4). Alternate Water Supply

Research with the Nevada Division of Water Resources indicated that there are very few groundwater wells within the vicinity of Town. Groundwater quality in the flatland is expected to be of poor water quality in this area. Consideration of an artesian well near town determined that the water quality exceeded drinking water standards for many constituents. Exploration in

the hills adjacent to Town for a municipal supply would include drilling a test well. The estimated cost for a hydrogeologic study would be approximately $35,000. If the test wells indicated that the water quality met the SDWA standards and that the water quantity was sufficient, then the GGID would have to drill and develop two production wells. The estimated cost of the production wells, pipeline and appurtenances would be approximately $750,000. This alternative was not analyzed further based on the costs to develop the system, the poor water quality throughout the area, and potential environmental impacts associated with a new site.

5). Alternate System

An alternate system considered was an ion exchange plant requiring an evaporation pond measuring 150 feet by 150 feet, with a liquid depth of 2 feet. The design was for a brine solution for regeneration of the chloride based IX resin. Regeneration is basically the process of replacing the uranium bound on the resin with chloride, using salt (NaCl). The regeneration process would consist of rinse processes resulting in a liquid waste. The liquid waste would go to a lined evaporation pond, which would be dried up annually, and the salt solids removed and disposed of at a low level radioactive waste facility. This process would expose birds and wildlife to potentially harmful water. Using the regeneration operational strategy, there would not be a need to replace the resin which is a major component of the proposed alternative's design. Due to the foreseeable issues associated with the evaporation pond, and the extremely high costs associated with transporting the salt solids, this design was not analyzed further. However, prior to its elimination as the proposed design, other methods of disposal were evaluated:

a) Waste Disposal

a1) Discharge of the Waste to Gerlach's Sanitary Sewer: Based on the characteristics of the liquid waste produced by the above eliminated design, discharge to the sanitary sewer was not an option. Federal regulations limit the uranium concentration to 3000 pCi/L for sanitary sewer discharge. The uranium concentration in the regenerant solution would far exceeds this level. Even if it were allowed, the community sewer would need to be extended about one mile to the treatment plant site. This would come at a cost of approximately $150,000.

a2) Discharge of the solid waste to the municipal landfill created by this process would exceed the levels allowed for disposal in a municipal landfill. Based on the estimated amount of solid waste generated annually from the ion exchange plant described in number above, approximately 6,000 pounds of solids would be produced and the uranium concentration would average approximately 7,000 mg uranium/kg of solids. This would exceed the level that can be disposed of in a municipal landfill. Therefore, a costly hauling need would be required for the disposal to a low-level radioactive waste facility. In addition, there would be potential adverse impacts to air quality by burning fossil fuel to transport the waste.

6). Point of Use Devices

An alternative was considered for installation of "point of use" (POU) filtrations. A POU system is a filtration device installed on each water faucet from which potable water is wanted. Although the individual filtration devices would be less expensive and there would be lower replacement costs than for a centralized treatment plant, its disadvantages were greater. There could be liability issues associated with entering a customer's home to monitor and service the units. Control of the treatment, water quality monitoring, operation, maintenance, and regulatory oversight is complex since the system is not centralized. Ensuring regulatory compliance is more difficult than for centralized plants. The performance can vary from user location to user location. There is a large water waste since for every 1 gallon of water treated, 3 gallons is wasted to the sewer. An lastly, because the POU devices do not treat all the water taps in the user location, a potential health risk results from household residents drinking untreated water. The alternative was not analyzed further.

VI. CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

The following chart identifies those critical elements which could be affected through implementation of the proposed disposal, and are analyzed within this environmental assessment.

Mandatory Critical Elements

AFFECTS TO THE HUMAN ENVIRONMENT

CRITICAL ELEMENTS	AFFECT	NO AFFECT	PRESENT
Air Quality	X		X
Areas of Critical Environmental Concern		X	
Native American Religious Concerns	X		
Environmental Justice		X	
Flood Plains		X	
Noxious Weeds	X		
Prime or Unique Farm Land		X	
Threatened or Endangered Species		X	
Migratory Birds	X		X

Water Quality		X	X
Ground Water		X	X
Wetlands/Riparian Zones		X	
Wilderness		X	
Wild and Scenic Rivers		X	
Cultural Resources	X		

VII. RESOURCES NOT ANALYZED

The following resources were not analyzed because the resources are not pertinent to the proposed land sale locations: wilderness study area or other statutory authorized designations associated with a wilderness study area, a wild horse and burro management area, wetland/riparian zone, floodplain, environmental justice, or areas of critical environmental concern. The project area does not contain known Paleontologic resources.

VIII. AFFECTED ENVIRONMENT AND ASSOCIATED ENVIRONMENTAL CONSEQUENCES

The subject 5 acre parcel was selected for the future filtration plant because its elevation allows the water to flow to Gerlach by gravity. Also the town's existing water system is located there consisting of piping and two water tanks. The 150,000 gallon redwood storage tank and the 300,000 steel storage tank are gravity fed by two springs. One of the springs is Railroad Spring, located approximately 7 miles from the water tanks. The other spring is Garden Spring located approximately 14 miles away. The existing water system is authorized by a Right-of-way(R/W) N-18357, granted to GGID by BLM on June 24, 1980.

Railroad Spring supplies the bulk of flow to Gerlach. Its flow rate is approximately 200 gpm. It has a uranium concentration of less than 100 µg/L. Garden Springs has a flow rate of approximately 75 gpm, and has the highest uranium concentration. However, uranium concentrations in the Railroad and Garden Springs have been as high as 110 µg/L and 290 µg/L, respectively. For most of the year, the raw water source is from Railroad Springs. Garden Springs is never used alone. Its use is primarily in the summer months when it is combined with the waters of Railroad Springs.

The water tanks are enclosed by chain link fence. Within this enclosed area is a concrete pad where a historic water tank stood, upon which the proposed plant-building would be built.

The need for this project is not an indication of concerns with the existing system's operation and maintenance. Based on an inspection of the visible system facilities, including the existing water tanks and the spring collection system, the facilities appear to be well operated and maintained.

The analysis for this EA is developed by analyzing the Direct Impacts and the Indirect Impacts of the project. The Direct Impacts are associated with the disposal of 5-acres of federal land. The Indirect impacts are based on the RFD scenario.

1). AIR QUALITY

The project is located in an area of arid climate characteristic of the Great Basin. Summers are typically warm and dry with moderately cold winters. Precipitation ranges from approximately 10-15 inches per year. The existing air quality is typical of large undeveloped areas in the western United States and is generally considered good. The major contributor to overall air quality is particulate emissions. These emissions include dust from cultivating agricultural fields and vehicular traffic on unpaved roads. Smoke, caused by burning of fields or wild land range fires, may degrade air quality during the spring and summer months.

Direct Impacts: Disposal of the 5-acres would not result in unacceptable impacts.

Indirect Impacts: Wind blown dust would be generated from surfaces where vegetation is removed. During the plant's construction, dust would likely occur locally and dissipate. Water could be used to retard the dust from forming. Travel on unpaved road surfaces accessing the property may also generate dust. Dust generated would however be localized and of short duration. There would be potential adverse impacts to air quality by burning fossil fuel to transport the used resin. Overall adverse impacts to air quality from the preferred alternative would be minimal.

No Action Alternative: Travel on the unpaved road surface which diagonally crosses the property may generate dust. Dust generated would however be localized and of short duration. Minor vehicle emissions would be generated from burning fossil fuels in vehicles.

2). PUBLIC HEALTH AND SAFETY

Naturally occurring uranium is present in spring water from which the town of Gerlach acquires its potable water.

Direct Impacts: There are no unacceptable impacts resulting from the disposal of the parcel.

Indirect Impacts: Removing the naturally occurring uranium from Gerlach's drinking water should not raise health and safety concerns regarding the permitting process, workers' safety, plant operation, purity of the water, and transportation of the filtrated by-product. Those aspects coming under regulatory agencies would be addressed by the Federal, State, or County regulations:

2a) The potential health hazard to workers would be the ingestion or inhalation of small amounts or uranium, not radiation. To address the health hazard, the housing building would be equipped with radiation monitors.

2b) A radiation specialist would address worker safety for the final design process. Radiation monitors would be placed at necessary locations within the building as needed.

2c). There are no surface water resources present at the sale area. Ground water is likely present but would not be affected. The quality of the water supplied by GGID would be improved**.** There would be no waste discharges from the proposed water treatment plant. No ground water aquifers or surface water sources would be affected during the construction. The uranium would be filtered and stored as a solid. There would not be a likelihood of a fluid spill percolating into the ground and affecting groundwater. Therefore, no groundwater aquifer sources would be affected from operation of the plant**.** Disposal of the 5-acres would result in a beneficial impact to water quality.

No Action Alternative: The land would not be sold to the GGID and the associated actions discussed above under the indirect impacts would not result.

3). CULTURAL RESOURCES

Ethnographically, the area is in the territory of the Northern Paiutes. The Western Shoshone occupied the adjacent territory. Since boundaries were loosely defined, either group may have overlain the areas used by the other. Typical land uses were hunting, plant material gathering, processing and lithic procurement.

Typically, hunting during the archaic involved game drives and ambushes, sometimes brush fences were incorporated into these hunting activities.

On open sites, hunting activities are characterized by projectile points and butchering tools. Projectile points are one of the most datable artifacts in the assemblages, placing sites in their relative chronological setting, Early, Middle or Late Archaic.

Plant gathering or small task sites typically leave little archaeological evidence outside of residential areas and are rarely recognized in the archeological record. The Northern Paiute did not commonly use pottery. Baskets are too fragile to remain on open sites, except in rare occurrences. Tools, such as metates, manos, knives, or hullers are most often found at base camps where plant processing occurred.

Lithic procurement and related task sites are found in the archaeological record, and toolstone may be traced back to its origin or occasionally through a trade route. Knapable toolstone may be carried back to a base camp if the source is nearby.

It is also reasonable to expect the remnants of historic activities. Some mining occurred in the area, but ranching and sheep herding were probably the dominant uses. Historic roads may be

found on the GLOs adjacent to for the area of potential sale. Ranches and roads are still in use throughout the area. Small line camps might be expected near springs or other water sources. Prehistoric sites would ordinarily be expected at springs. Post-contact sites may be encountered near ranches as Native American found work at those ranches. Agriculture and ranching activities are the mainstay of the area now.

The general area has been used extensively from Early Archaic to modern times. While all of the resources are available the parcel is not quite within easy range of dependable resources to expect large camps or long term occupation sites on the parcel. A cultural inventory was conducted to determine if significant resources are present. The inventory determined the area is disturbed, and historic surveys showed no significant finds. In conclusion, at this time there are no significant sites known to be on parcels being considered for the proposed sale.

Direct Impacts: Cultural Resources transferred into private ownership would no longer be protected under Federal laws.

Indirect Impacts: The land base was generally overall disturbed by the construction of the water towers and subsequent use. Disturbance of the land for the proposed filtration system would not result in impacts to recognized cultural resources.

No Action Alternative: Cultural resources would remain under the protection of Federal law. Significance is not a consideration under the Archaeological Resources Protection Act. With time the historic sites would also come under the protection of this Act as they reach the 100-year threshold.

4). NATIVE AMERICAN RELIGIOUS CONCERNS

Native American Religious concerns are not evident. Consultation with the Tribes has not been necessary.

Direct Impacts: Disposal of the parcel to private ownership would close or limit access to the parcels for gathering and hunting (or other activities).

Indirect Impacts: The foreseen construction on the parcel when in private ownership would close or limit access to the parcels for gathering and hunting (or other activities).

No Action Alternative: If the parcels were not transferred to private ownership, access would continue to be restricted as is at present. Impacts to Native American religious concerns would not occur.

5). NOXIOUS WEEDS

Nevada has listed 42 non-native invasive plant species that require control.

A complete list of these weeds is attached. Of these 42 species, 13 are found on the WFO and include the following:

Common Name	Scientific Name
Poison Hemlock	*Conium maculatum*
Russian Knapweed	*Acroptilon repens*
Spotted Knapweed	*Centaria maculosa*
Leafy Spurge	*Euphorbia elsua*
Medusahead	*Taeniatherum caput-medusae*
Tall White Top	*Lepidium latifolium*
Puncturevine	*Tribulus terrestris*
Salt Cedar (Tamarisk)	*Tamarix ramosissima*
Canada Thistle	*Circium arvense*
Musk Thistle	*Cardus nutans*
Scotch Thistle	*Onopordum acanthium*
Yellow Star Thistle	*Centaria solstitalis*
Hoary Cress	*Cardaria draba*

When introduced to an area, these non-natives, invasive plant species can quickly dominate the landscape if management action is not initiated to control the infestations' expansion. Noxious weeds may proliferate, forming monocultures, which can crowd out other plants that provide biodiversity. Weeds are spread from infested areas by people, equipment, animals and wind.

There were no noxious weeds identified at the proposed sale location.

Direct Impacts: Disposal of the 5-acres would not have an effect on noxious weeds.

Indirect Impacts: Once in private ownership, noxious weed populations would become the purchaser's liability. Weed management would be under the requirements of the State of Nevada. Nevada Revised Statutes, Chapter 555.05 defines "noxious weeds", and mandates land owners and land management agencies to include control of noxious weeds on lands under their jurisdiction. The new owner will be responsible under NRS555 to control noxious weed infestations.

No Action Alternative: Were the 5-acres to remain under the BLM's administration, noxious weed management would remain the responsibility of the WFO. The BLM utilizes several laws that authorize control of noxious weeds on public land under their administrative jurisdiction, e.g., The Federal Insecticide, Fungicide and Rodenticide Act (1972), Federal Noxious Weed Act (1974), FLPMA (1976), Public Rangelands Improvement Act (1978). Noxious weed control projects on BLM administered land are coordinated with other Federal, State, Tribal, and County agencies and other organizations in a collaborative effort to maximize use of limited resources. Partnerships have been developed with the USFS, NRCS, Shoshone-Paiute Tribes, Humboldt, Pershing and Washoe Counties, NDF, Humboldt County Weed Task Force, Paradise Valley

Weed District, and 2 recently established Cooperative Weed Management Areas (CWMAs): Gerlach and Pershing County CWMAs. On-going noxious weed inventories conducted by the Winnemucca Field Office (WFO) would identify any existing noxious weed infestations. These weed locations would be included in the WFO weed control program.

6). GEOLOGY and MINERALS

The parcel lies on the southern portion of the Granite Range near the western edge of the Great Basin. The Granite Range is a high relief uplifted fault block bounded on the west and east by faults which appear to be related to the typical "basin-and-range" type tectonic stresses. The parcel lies on the inferred fault located on the western side of the Granite Range. The south end of the range is composed of granitic rocks. The parcel has potential for locatable, leaseable, and saleable minerals. Several decomposed granite gravel pits are authorized in the general area. That potion of the parcel falling within Section 16 lies within the Gerlach Known Geothermal Resource Area (KGRA) with associated leases.

Two major effects of earthquakes in the High Desert Planning Area are surface rupture/ground displacement along a fault and ground shaking. Each of these effects can cause major damage to structures, utilities and roads. The Nevada of Bureau of Mines and Geology has preliminary data on faults for the High Desert Planning Area (Washoe County Comprehensive Plan, High Desert Plan, page 7).

Direct Impacts: There would be no impacts resulting from the disposal of the 5-acres.

Indirect Impacts: The development of the site could complicate mineral development potential. There would be no impacts to the geologic resource from the proposed development of the filtration plant.

No Action Alternative: The existing water towers could cause a conflict to developing potential mineral resources.

7). HAZARDOUS MATERIALS (HAZMAT)

A HAZMAT Phase I Environmental Assessment was completed. There are no recognized environmental conditions on the property. Nor were hazardous substances or petroleum products recognized as having been stored, released, or disposed in excess of CERCLA reportable quantities.

Direct Impacts: There would be no unacceptable impacts resulting form the disposal of the 5-acres.

Indirect Impacts: Based on the operation procedures discussed under the RFD, and Section IV part "D", unacceptable impacts from possible spills, storage leakage, or transporting the resin are not expected and were such to happen would be minimal.

No Action Alternative: The water would not be filtered. The water would not meet the contaminant level of uranium set by the USEPA. Gerlach could be required by the Nevada State Health Department to stop using the raw spring waters for the city's water supply.

8). PUBLIC ACCESS

The primary access is to the site is by State Route 447 which is intersected by the "Godey's Gap" road.

Direct Impacts: Disposal of the 5-acres would not affect the public's access over the county road.

Indirect Impacts: "Godey's Gap Road" is authorized to the Bureau of Reclamation by R/W NEV-065524 which allows the free and unencumbered us of the road by the public. The allowances contained within the R/W goes with the land as an encumbrance. State Route 447 is open to the public for free and unencumbered use. Development of the filtration plant would not effect public access on the existing roads subject to R/W provisions. Access would be restricted where areas are fenced off or signed to restrict entry.

No Action Alternative: Access to and across the parcel would remain unchanged.

9). RANGE

The proposed disposal area is located within the Buffalo Hills Grazing Allotment. Open range livestock grazing is permitted during certain periods of the calendar year. One half of the 5-acres are currently fenced, which stops the range animals from utilizing the area.

Regulations require that the permittee(s) be given a two-year notice of the sale proposal. The premittee(s) have two options. They can waive the 2-year notification period, and the sale acres would be deleted from the grazing permit. Otherwise, the permittee(s) would continue to have the permitted use of the land for two years from the date of notification.

Sheep trailing is authorized on the east/north side of the State Route 447. The sheep are herded to the north side of the highway and the proposed sale area. Use of Federal land for sheep trailing is authorized by a temporary crossing permit.

There are no range improvements identified on the proposed disposal area.

Direct Impacts: The proposed disposal of the five aces would not affect the number of permitted animal unit months (AUMS). The grazing permittees have been notified of the proposed sale as have the permittees for the sheep herds which could trail near the sale area. The disposal of the 5-acres would not result in impact to range.

Indirect Impacts: The entire 5-acres might be enclosed by fencing which would prevent sheep and range animals from utilizing it.

No Action Alternative: It would not be necessary to notify the permittees of a land disposal. The GGID could fence the perimeter of the 5-acres authorized under their existing R/W, which would prevent sheep and range animals from using it.

10). RECREATION

Access to any areas which may be used for recreation is likely by State Route 447 and Godey's Gap Road, from which recreationists might find departure points onto the adjacent BLM land. The land area's close proximity to the highway make it unsuitable for hunting. Recreationists might use the southern portion of the 5-acres to hike across, ride an OHV vehicle, and other recreational activities. The land area is not a developed recreation site. It is not located near or on a designated trails-way. It has an OHV (off road vehicle) designation.

Direct Impacts: Disposal of the parcel would not interfere with access points to adjacent federal land.

Indirect Impacts: Dispersed recreation activities which might be enjoyed on the land base could cease.

No Action Alternative: The current recreational experiences would remain the same.

11). SOILS

Soils information is extracted from the Soil Survey of Washoe County, Nevada, Central Part by the Soil Conservation Service USDA. The landscape positions are lake plain terraces, alluvial fans and insert fans. Climate data averages: approximately 7 inches precipitation annually; air temperature 51 degrees F.; frost free season approximately 120 days.

There are 3 soils in the land sale parcel. The following table lists map unit number, soil name corrosivity, and erosion hazards water/wind.

Map Unit Number	Name	Corrosivity	ErosionHazard Wind	ErosionHazard Water
1580	Troken: very gravelly sandy loam, 4 to 15 percent slopes	Steel: high Concrete: low	Slight	Slight
1580	Ganaflan: gravelly loam; 4 to 15 percent	Steel: high Concrete: moderate	Moderate	Slight
1580	Bluewing: very gravelly loamy sand; 4 to 15 percent slopes	Steel: high Concrete: low	Slight	Slight

Wind erosion occurs when vegetation is removed and the soils are dry. Loss of soil by wind involves two processes, detachment and transportation. Sand particles move along the ground surface, dislodging fine particles of silt and clay. These smaller particles move upward into the

air. Wind erosion is less where soils surface is rough, stubble remains, or the soils are moist. Soil particles or aggregates about 0.1 millimeters in diameter are most erodible. Fine sand textures are most susceptible to wind erosion. The removal of vegetation would increase wind erosion. Wind erosion impacts would be slight or moderate; these impacts can be reduced by maintaining vegetation or by using conservation practices to protect the soil surface from the impacts of wind.

Direct Impacts: There would be no impacts to soils from the disposal of the 5-acres.

Indirect Impacts: Washoe County's Comprehensive "High Desert Area Plan" requires on site investigations be conducted to determine the appropriate design of foundations and specific placement of buildings, roads and utility lines. These site specific investigations should include a soil analysis conducted by a certified geologist or soil scientist. The proposed building would be constructed of concrete. There would not be a corrosive factor resulting from contact with the existing soils. Soils would be disturbed during construction activities. Removal of vegetation would expose soils to potential wind and water erosion. These impacts are expected to be localized and impacts reduced once the site is revegetated, compacted, or covered with a hard surface.

No Action Alternative: Impacts to the soil resources would not occur.

12). VEGETATION

The area supports vegetation typical of the Great Basin region. Primary species are shadscale (*Atriplex confertifolia*), bud sagebrush (*Artemisia spinescens*), bottlebrush squirreltail (*Elymus elymoides*); disturbed areas are dominated by annual species of cheatgrass (*Bromus tectorum*) and mustards (*Brassica*).

Direct Impacts: There would be no impacts from the disposal of the 5-acres**.**

Indirect Impacts: The potential exists for removing the existing plants. Impacts to the overall vegetation community would be minor. Adverse impacts to vegetation resources would be low.

No Action Alternative: The GGID could utilize the entire 5-acres authorized by their R/W which could result in plants being removed.

13). PLANT THREATENED OR ENDANGERED SPECIES (T&E)

No on-the-ground field investigation was performed on the 2.5-acres of land not authorized under the existing R/W. However, according to the Nevada Natural Heritage data base (January 2003) no endangered, threatened candidate or sensitive plant species have been determined to occur within the project area. The 2.5-acres encumbered by the R/W have been disturbed by construction, maintenance, and general use, resulting in no species likely being present.

Direct Impacts: T&E plant species would no longer be managed in accordance with the Federal laws as when within the Federal land ownership overlay. Disposal of the 5-acres would not impact T&E plant species.

Indirect Impacts: The proposed construction is planned within a previously disturbed area. Any new disturbance would not affect T&E plants as none are present.

No Action Alternative: T&E plant species would be managed in accordance with the Federal laws.

14). VISUAL RESOURCE MANAGEMENT (VRM)

The parcel lies in a relatively flat area at the south end of the southern Granite Range overlooking the San Emidio, Smoke Creek, and Black Rock Deserts. The landscape surrounding the area consists of the rounded hills of the southern Granite Range and the flat desert bottomlands. The predominant colors are browns, tans, and reddish browns. Vertical erosion stripes are visible in the background to the north of the parcel. The vegetation is green, brown, tan and yellow. The vegetation is smooth with occasional areas of patchiness.
The parcel is located within an area designated as VRM Class II (BLM 1981). The objective of VRM Class II is to retain existing landscape character. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract a casual observer's attention. Any changes must repeat the basic elements of line, form, color, and texture found in the predominant natural features of the characteristic landscape (BLM, 1986).

Structures currently existing on the parcel include a county road, boundary fencing and two water towers. The water towers are the most dominant structures on the parcel and consist of two colors. One is painted a light color which blends in with the disturbed soils of the setting. The second water tower is natural redwood. Neither of the water towers blend with the natural setting of the landscape.

Direct Impacts: VRM requirements would be regulated by Washoe County directives. There would be no impacts to the VRM resource from disposal of the 5-acres.

Indirect Impacts: Washoe County's Comprehensive "High Desert Area Plan" has identified the vicinity as having "outstanding scenic resources"… "protecting the visual quality of all scenic areas should be an objective of future development in the planning area." Future use of the land would be within the parameters allowed by Washoe County.

No Action Alternative: The proposed filtration system would not be built and the water towers would remain the singular feature on the site.

15). LANDS AND REALTY

The following encumbrances overlay the five acre parcel:

Right-of-way (R/W):

R/W N-18357 issued to the Gerlach General Improvement District for water storage tanks and associated pipelines.

R/W NEV-065524 issued to the Bureau of Reclamation for Godey's Gap Road which authorizes a 24 foot wide road for public ingress and egress.

R/W N-5465 Known Geothermal Resource Area issued to Western Geothermal Partners, LLC for a geothermal lease.

R/W N- 76832 issued to Sierra Pacific Power Company for an aerial power transmission line.

Direct Impacts: The parcel would be sold subject to the encumbrances. Reservations to the United States would be retained for Ditches and Canals, and the Mineral Estates.

Indirect Impacts: Whether to allow future encumbrances would be at the discretion of the GGID.

No Action Alternative: The encumbrances would remain as an authorization from the BLM and would be managed by the BLM.

16). WILDERNESS

The lands have a B-2 designation which eliminates them from further investigation for wilderness classification. The document "Smoke Creek Desert" number NV-020-013 encompasses 100,000 acres of public land. Based on the review, the recommendation is the area lacks wilderness characteristics.

Direct Impacts: There would be no impacts resulting for the disposal of the 5-acres.

Indirect Impacts: There would be no impacts resulting from the disposal of the 5-acres.

No Action Alternative: The lands have a B-2 designation, which eliminates them from further investigation for wilderness classification. The area remains without wilderness characteristics.

17). WILDLIFE

Terrestrial Wildlife: This section is subdivided into priority species and special status species.

a) Priority Species

Priority species for the project area include mule deer, pronghorn antelope and neo-tropical migrant bird species associated primarily with riparian areas. California bighorn sheep and greater sage-grouse are considered in the Special Status Species section below. Impacts would be considered for the priority species. Analyzing impacts on these species would provide a reasonable assessment of important wildlife habitat communities. The

selected priority species are associated with sagebrush steppe and mid-elevation riparian systems.

Mule Deer
Muledeer are a herbivore normally utilizing a sagebrush community. Since the project area is a shadscale community, no impacts to mule deer are expected.

Pronghorn Antelope
Pronghorn antelope are normally a low sagebrush community herbivore; however, in winter pronghorn may use a shadscale community for winter forage. The project area is not optimum for pronghorn because the project's proximity to a highway and the town of Gerlach. No adverse impacts are anticipated to pronghorn antelope.

Neo-tropical Migrant Birds
Neo-tropical migrant bird species are those species that breed in the temperate portions of North America and winter in the tropics in either North or South America. They are protected by international treaty, and additional emphasis on maintaining or improving their habitats is provided by Executive Order #13186. Within the Great Basin and the project area quality riparian habitats are required for healthy Neo-tropical Migrants populations. Since the project area does not have riparian habitat, no impacts to Neo-tropical Migrants are expected.

b) Special Status Species
Special status species for the project area include those terrestrial species listed or proposed for listing under the Endangered Species, species designated by the FWS (FWS Nevada species list, October 30, 2003) and candidates for listing and species contained in the BLM's Nevada Species of Concern list (IB NV-2003-97). A letter from the USFW Service dated July 5, 2001, at the initiation of project planning indicates there are no known or endangered or threatened species listed for the Gerlach area.

Little specific information is known about the current status or habitat conditions within the project area for a number of species. Potential impacts for these species can only be discussed in general terms related to their potential habitats.

Pygmy rabbit (*Brachylagus idahoensis*)

Pygmy rabbits occupy tall, dense stands of big sagebrush growing on deep, well drained, loamy soils containing a good understory of native grasses. Within and near the project area there are no habitats for pygmy rabbits and no impacts to pygmy rabbits are expected.

Bats:

Pale Townsend's big-eared bat (*Corynorhinus townsendii pallescens*)
Pacific Townsend's big-eared bat (*Corynorhinus townsendii townsendii*)

Spotted bat (*Euderma maculatum*)
Small-footed myotis (*Myotis ciliolabrum*)
Long-eared myotis (*Myotis evotis*)
Fringed myotis (*Myotis thysanodes*)
Long-legged myotis (*Myotis volans*)
Yuma myotis (*Myotis yumanesis*)

Potential impacts on bats of implementing the proposed project are largely unknown. This project would have no impact on breeding or hibernation sites. Bats normally use sagebrush communities and riparian systems that are thought to provide a disproportionate share of the flying insects that bats depend upon as prey. Since the project area is not a sagebrush community and/or a riparian community no impacts to bats are expected.

Habitat Generalists:

Bald Eagle (*Haliaeetus leucocephalus*)
Ferruginous Hawk (*Buteo regalis*)
Golden Eagle (*Aquila chrysaetos*)
Northern Harrier (*Circus cyaneus*)
Prairie Falcon (*Falco mexicanus*)

These species are habitat generalists and no significant impacts are expected to any of these species.

Riparian Obligates:

Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)
Northern goshawk (*Accipter gentiles*)

These species are riparian obligates associated with woody sites, and none of this habitat exists in the project area. No impacts to these two species are expected.

Western burrowing owl (*Athene cunicularia hypugea*)

Western burrowing owl habitat and colonies may occur in sandy soils required for their burrows. The project site does have some sandy soils; however since the proposed sale is for 5-acres no significant impacts are expected to burrowing owls.

Greater sage-grouse (*Centrocercus urophasianus*)

> This species occupies known areas within the Granite Range, however none of its habitat is within and/or near the project site, therefore no impacts to this species is expected.

Additional Species:

California bighorn sheep (*Ovis Canadensis californiana*)
Greater sage-grouse (*Centrocercus urophasianus*)

These two species occupy known areas within the Granite Range, however none of their habitat is within and/or near the project site, therefore no impacts to these species are expected.

Mountain yellow-legged frog (*Rana muscosa*)
Warner sucker (*Catostomus warnerensis*)
Cui-ui (*Chasmistes cujus*)
Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*)
Carson wandering skipper (*Pseudocopaeodes eunus obscurus*)
Steamboat buckwheat (*Eriogonum ovalifolium var. wouldiamsiae*)
Webber ivesia (*Ivesia webberi*)
Tahoe yellowcress (*Rorippa subum bellata*)

These species are not found in or near the project site, therefore no impacts are expected.

Direct Impacts: Wildlife species would no longer be managed in accordance with the Federal laws. Considering the small size of the 5 acre parcel, any disturbance would be offset by the thousands of non-disturbed adjacent Federal lands.

Indirect Impacts: Based on the past disturbance of the area, this parcel would provide no habitat value for the majority of species which would otherwise utilize this area, especially for sagebrush obligate species such as the Brewers sparrow, sage thrasher, sage-grouse, and pygmy rabbit. The filtration plant will be housed in a concrete building. Wildlife should not be able to access or come in contact with the resin.

No Action Alternative: Wildlife species would be managed in accordance with the Federal laws.

18). THREATENED AND ENDANGERED SPECIES (T&E)

Based on the project area location and habitat characteristics at the site, there are no Threatened or Endangered (T&E), nor sensitive wildlife species which may be present.

Direct Impacts: T&E species would no longer be managed in accordance with the Federal laws as when within the Federal land ownership overlay.

Indirect Impacts: There are no T&E wildlife species, nor sensitive species at the location. The proposed project would not adversely effect T&E species or sensitive species.

No Action Alternative: T&E Species would come under the mandates of Federal laws as applicable to Federal land.

IX. CUMULATIVE, INTERDEPENDENT, AND INTERRELATED IMPACTS

The Council of Environmental Equality (CEQ) regulations defines cumulative impacts as: "…[T]he impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or Non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

The cumulative impact assessment area for this EA has been defined in map 3, and includes portions of the watersheds located near the south end of the Granite range and the town of Gerlach. The cumulative impact assessment area includes approximately 7, 350 total acres, encompassing approximately 10 sections of land. Its northern extremity is the southern portion of Section 33, T. 33 N., R., 23 E., on the ridge line of the Granite Mountains at elevation 1,600 feet. The ridge breaks the water - shed to drain to the Southeast and the Southwest. The east directional of the analysis area follows the edge of the Black Rock Desert. The southern and western directional of the analysis area follow a stream channel. These boundaries represent a natural demarcation line for soils thereby creating a dividing line for animal habitat and vegetation type.

Past/Present Actions

Past and Present Actions occurring within the assessment area includes; livestock grazing, mineral actions, and recreation.

Livestock Grazing – Forage allocation of vegetation on a multiple use basis to livestock has occurred from the early 1980s to the present. The BLM establishes resource management objectives and livestock grazing management actions by livestock grazing allotment. Grazing on public lands is dispersed throughout the cumulative impact assessment area.

Mineral Actions – The assessment area has little in the way minerals development and is confined to past prospecting for precious metals and geothermal resources.

Recreation – Past recreation use within the assessment area included dispersed recreation activities such as hunting, wildlife viewing, hiking and rock hounding.
Present recreation includes similar dispersed activities.

Reasonable Foreseeable Future Actions (RFFAs)

It is anticipated that RFFAs would be similar to those defined under past and present actions for livestock grazing and recreation. Mineral actions and social and economic actions are defined per the following:
Mineral Actions – Mineral actions may slightly increase due to the potential for geothermal resource development based on the Nevada legislature renewable energy portfolio standard. This standard requires the state's two investor-owned utilities to derive a minimum percentage of total electricity sold from renewable energy resources.
Social & Economic - Based on anticipated population growth throughout Nevada, it would be expected that water demand may increase over time in the future.

Air Quality
Past & Present
Livestock grazing – Grazing within the assessment area contributes few adverse impacts to air quality. Trailing of livestock may generate fugitive dust; however, these impacts are short term and localized. Heavy concentrations of livestock may produce various levels of methane gas into the air, depending on the number of livestock and atmospheric conditions. Livestock grazing would have minimal impacts to air quality within the assessment area.

Mineral Actions – These actions affect air quality through the production of dust during mining and exploration, emissions from heavy equipment, and emissions from processing facilities. These impacts are dependent on the nature and degree of surface disturbance and atmospheric conditions. Adverse impacts to air quality from mineral actions are mitigated by federal and state permit requirements. Air quality impacts from mineral actions are low, as mineral actions are presently not occurring within the assessment area.

Recreation - Impacts to air quality include the generation of fugitive dust by Off Highway Vehicles (OHVs). These impacts are generally localized to specific areas and are of short duration and would have a minimal affect on air quality.

RFFAs
Impacts from livestock grazing and recreation are expected to remain similar to those identified in past and present analysis.

Minerals – It is anticipated that impacts to air quality from mineral actions would remain similar to those impacts identified under past and present actions. Exploration impacts would include creation of fugitive dust during road building, exploration, and plant development. These impacts would be short term and localized and would be mitigated through permit requirements by federal and state permitting agencies.

Social & Economic - Community growth may slightly affect air quality as more vehicles would be burning fossil fuels in the area.

Public Health and Safety

Past & Present

There have been little if any impacts from livestock grazing, mineral actions, and recreation to public health and safety.

RFFAs

Impacts from RFFAs would be similar to past and present impacts for livestock grazing and recreation.

Mineral Actions

Increases in geothermal exploration and development should have little affect to public health and safety.

Social & Economic

Long term community growth may increase traffic patterns and congestion within the Gerlach community.

Cultural Resources

Past & Present

Livestock Grazing – Impacts to cultural resources from livestock grazing remain low. There could be direct physical damage to cultural resources from trampling. Over grazing can remove vegetation exposing cultural resources and making them more vulnerable to potential illegal collection.

Mineral Actions – Mineral actions have moderate impacts to cultural resources. Mining and exploration equipment can physically damage resources or bury them. For projects that require a plan of operations, these impacts are reduced subject to requirements during the BLM permitting process to perform cultural resource inventories prior to surface disturbance activities. Once inventories are completed mining actions would avoid any cultural resources identified or other mitigation measures are developed to reduce impacts.

Recreation –OHV travel can remove vegetation exposing cultural resources. Areas in the vicinity of permanent and intermittent water sources (i.e. riparian areas) have the highest potential for cultural resource sites. These areas are also attractive for recreation use thus increasing the potential for illegal collection.

RFFAs

Impacts to cultural resources would be expected to remain similar as those analyzed under past and present with the exception of social and economic.

Social & Economic

Increased growth of population within and around the assessment area may increase the potential for illegal collection of cultural resources. It is anticipated that these impacts would be minimal.

Noxious Weeds

Past & Present

Livestock grazing – Grazing within the assessment has promoted the establishment and spread of noxious weeds through dispersal of seed or by removal of vegetation in areas of heavy concentration and utilization. These impacts have been mitigated by properly managing livestock, meeting allotment specific objectives and Standards for Rangeland Health. In addition, current noxious weed control programs are being implemented within portions of the assessment area.

Mineral Actions –Mineral actions can disturb large areas of land which could promote the establishment and spread of noxious weeds. These impacts are low based on federal and state permit requirements to re-vegetate disturbed areas and control noxious weeds on reclaimed areas.

Recreation - Activities can denude areas of vegetation from OHV travel and in concentrated use areas. Areas where vegetation has been removed are more prone to the establishment of noxious weeds. OHVs can also spread noxious weeds seeds as they fall off of the under carriage of vehicles. Overall these impacts remain low but could increase over time.

RFFAs

Livestock grazing, Mineral actions, and Recreation - Impacts from these actions are expected to remain similar as past and present actions.

Social & Economic

Increasing population may promote the spread of noxious weeds by having weed seeds spread by off road travel as more vehicles are used within the assessment area. Vehicles may spread noxious weeds as seeds are carried on the under carriage of vehicles. These impacts would be reduced by eradication programs, between federal, state, and local agencies.

Geology and Minerals

Past & Present

Livestock grazing and recreation use has had little impact to geological resources. Mineral actions may have removed precious metals making them unavailable for future exploration and development.

RFFAs

It is anticipated that there would be minimal impacts from livestock grazing, minerals actions, and social economic impacts to geology or mineral resources.

Hazardous Materials

Past and Present
There have been no known impacts from past and present actions from hazardous materials releases or spills.

RFFAs
It is anticipated that impacts would be similar to those identified under past and present actions for livestock grazing and recreation.

Mineral Actions
Development of a geothermal power plant may introduce new chemicals as they are transported through the community and to potential sites. Potential spills could be mitigated based on required emergency response plans as part of the federal, state and local permitting process.

Social & Economic
With the increase in population, the area would probably have more hazardous materials brought into the community. There would be an incremental increase in the chance of a hazardous material spill.

Public Access
Past & Present

There have been no known restrictions to public access from past and present actions within the assessment area.

RFFAs

Livestock grazing
Ranching operations could restrict public access to public lands if travel through private land to get to public land is required. Private land owners may prohibit public travel through private lands.

Mineral actions
Mineral exploration and development for hard rock minerals or geothermal resources could restrict public access within defined project areas. These affects would be expected to be minimal.

Recreation
It is highly unlikely that recreation activities within the assessment area would affect public access. Sometimes large scale recreation events may limit or alter public access. The potential for commercial recreation events to occur within the assessment area is low.

Social & Economic – With the increase in population the demand for more public access would increase accordingly.

Range
Past & Present

Mineral Actions
Past and present mineral development has had low impacts to livestock operators as the number of AUMs lost to these actions, have been relatively minor. In some cases, the mineral industry has compensated livestock operators for loss of AUMs. Reclamation of mine and exploration sites include re-establishment of vegetation which would be a benefit to livestock operators as forage for livestock would be re-established.

Recreation
Adverse impacts from recreation to livestock operators include vandalism of facilities such as troughs and fences, harassment of livestock, and potential for starting a rangeland wild fire from a campfire or sparks from OHVs. These impacts have had moderate impacts to the livestock operators as additional funds have to be expended to repair or replace facilities or protect livestock and provide additional forage for livestock which has been destroyed by fire.

RFFAs
Livestock grazing, Recreation, and Mineral actions - Impacts from these actions are expected to remain similar as past and present actions.

Social & Economic – Assuming an increase in population the potential for vandalism of range facilities may increase.

Recreation
Past & Present

Livestock grazing
Past and present livestock grazing has had little effect on recreation users. Livestock grazing can impair the experience of recreation users especially near camp sites or other recreation areas. Others consider livestock grazing as part of the western outdoors experience.

Mineral Actions
Minerals actions have had low impacts to recreation users. Adverse impacts may include restriction of public access to lands while mineral exploration or development is occurring.

Recreation
Adverse impacts can occur by competing recreation uses within the cumulative assessment area. Impacts from competing recreation uses would be dependent on the users and type of activity.

These impacts would be considered minimal, as the assessment area has low potential for recreation use.

RFFAs

Livestock Grazing, Mineral Actions, Recreation
RFFA impacts from these actions would be similar to the past and present analysis.

Social & Economic
Increase in population within the assessment area would increase recreation use of the public lands.

Soils & Vegetation
Past & Present
Livestock grazing
Areas where overgrazing from livestock have occurred combined with the introduction of invasive or exotic species has adversely impacted soils leaving them susceptible to erosion. Cheatgrass was first identified in Nevada in the early 1900's. The loss of native grasses has resulted in dominance by invasive annual weeds.

Mineral Actions
Mineral activities include removal of vegetation leaving soils susceptible to wind erosion. These impacts would be low, as they are generally localized to certain areas and mitigation measures are developed and implemented during the federal and state permitting process. In addition reclamation requirements include re-establishing vegetation to reduce erosion potential to soils.

Recreation
Soils are damaged by OHV use either through compaction or by removal of vegetation, making soils susceptible to wind erosion. These impacts are considered low overall, as recreation activities are dispersed and little recreation use occurs throughout the assessment area.

RFFAs
Livestock grazing, Recreation and Mineral actions - Impacts from these actions are expected to remain similar as past and present actions.

Social & Economic
Increase in local population would incrementally increase recreation use and the need for support facilities to accommodate growth. Impacts to soils and vegetation would include removal of vegetation and potential increase for soil erosion while facilities are being built. These impacts would be expected to be low.

Visual Resource Management

Past & Present

Livestock Grazing

Prior to the 1970s, visual resources were not considered in making land use decisions. Range improvement projects have impacted view sheds by creating linear features such as fence lines. Presently range improvement projects continue to affect and may intrude on view sheds; however, these impacts are mitigated through a number of techniques such as painting facilities to blend with the surrounding background.

Mineral actions

Moderate impacts occur to the setting from mineral actions. Exploration roads can create highly visible linear features. Mines or geothermal plants create permanent facilities which can be highly visible. Federal and state permit requirements reduce visual impacts by requiring reclamation and ensuring that facilities blend with the surrounding topography.

Recreation

Impacts related to recreation include areas where vegetation is removed by OHV travel. These areas are readily visible and can create linear features such as new trails.

RFFAs

Livestock grazing, Recreation and Mineral actions - Impacts from these actions are expected to remain similar as past and present actions.

Social & Economic

Increasing population would incrementally increase the need for support facilities within the assessment area. These facilities would potentially increase visual intrusions in the area. However, these impacts would be low, as facilities would most likely be located in or around the town of Gerlach where visual intrusion have already occurred.

Wilderness

Past, Present and RFFAs –

There would be no cumulative impacts to Wilderness or Wilderness Study Areas as these areas are not present within the cumulative assessment area.

Wildlife

Past & Present

Livestock grazing

Any past overgrazing by livestock would adversely impact habitat for cover and forage availability for wildlife. Current impacts include degradation of wildlife habitat, should concentrated livestock use occur.

Overall these impacts are low within the assessment area. Based on implementation of allotment specific objectives and Standards for Rangeland Health, adverse impacts to wildlife from overgrazing would be reduced.

Minerals Actions
Mineral actions remove vegetation which adversely impacts wildlife habitat for cover and forage availability. In addition, mines or geothermal plants may force wildlife to relocate due to noise and human activity. These impacts are mitigated based on requirements of federal and state agencies during the permitting process. Overall impacts from mineral actions should be low.

Recreation
Hunting and other activities may chase wildlife out of areas. It is expected that these impacts would be short term and seasonal.

RFFAs
Livestock grazing, Recreation, Mineral actions and Social & Economic – It is anticipated that impacts from livestock grazing, recreation and minerals actions would be similar to impacts identified under the past and present analysis.

Threatened, Endangered, Sensitive Species
Past, Present, and RFFAs
There would be no cumulative impacts to Threatened, Endangered, or Sensitive Species as none are known to occur or use the assessment area as habitat.

Overall, cumulative impacts for all resources analyzed under Alternative 1, range from minimal to low.

Cumulative Impact – No Action Alternative
Cumulative impacts from the no action alternative would be similar to those identified under Alternative 1, the Preferred Alternative, with the exception of RFFAs for Social & Economic. Without a water treatment plant, long term population growth may be curtailed in the area as some may feel the water is unsafe to drink.

X. LIST OF BUREAU OF LAND MANAGEMENT SPECIALISTS

Clarence Covert	Wildlife Biologist/T&E Species
Jonathan Sheeler	Range Conservationist
Mike Zielinski	Soils Scientist, Air Quality, Vegetation, T&E Plant
Rod Herrick	Hazardous Materials, Minerals
Regina Smith	Archaeologist
Barbara Keleher	Outdoor Recreation Planner
Craig Drake	Hydrologist
Charles Neill	Exotic Species (Plants)
Jerry Carpenter	Supervisory Civil Engineering Technician
Glenna Eckel	Wild Horse and Burros
Delores Cates	Geology, Visual Resource Management

M. Lynn Trost	Realty Specialist, ID Team Lead
Jeff Johnson	NEPA Specialist
Robert Edwards	Supervisory Nonrenewable Resource Specialist

XI. PERSONS, GROUPS, AGENCIES CONSULTED

See " Mailing List" (Appendix I).

XII. REFERENCES

USEPA, "Implementation Guidance for Radionuclides", Office of Ground Water and Drinking Water (4606M), EPA 816-F-00-002, www.epa.gov/safewater, March 2002

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